

Fig. 1

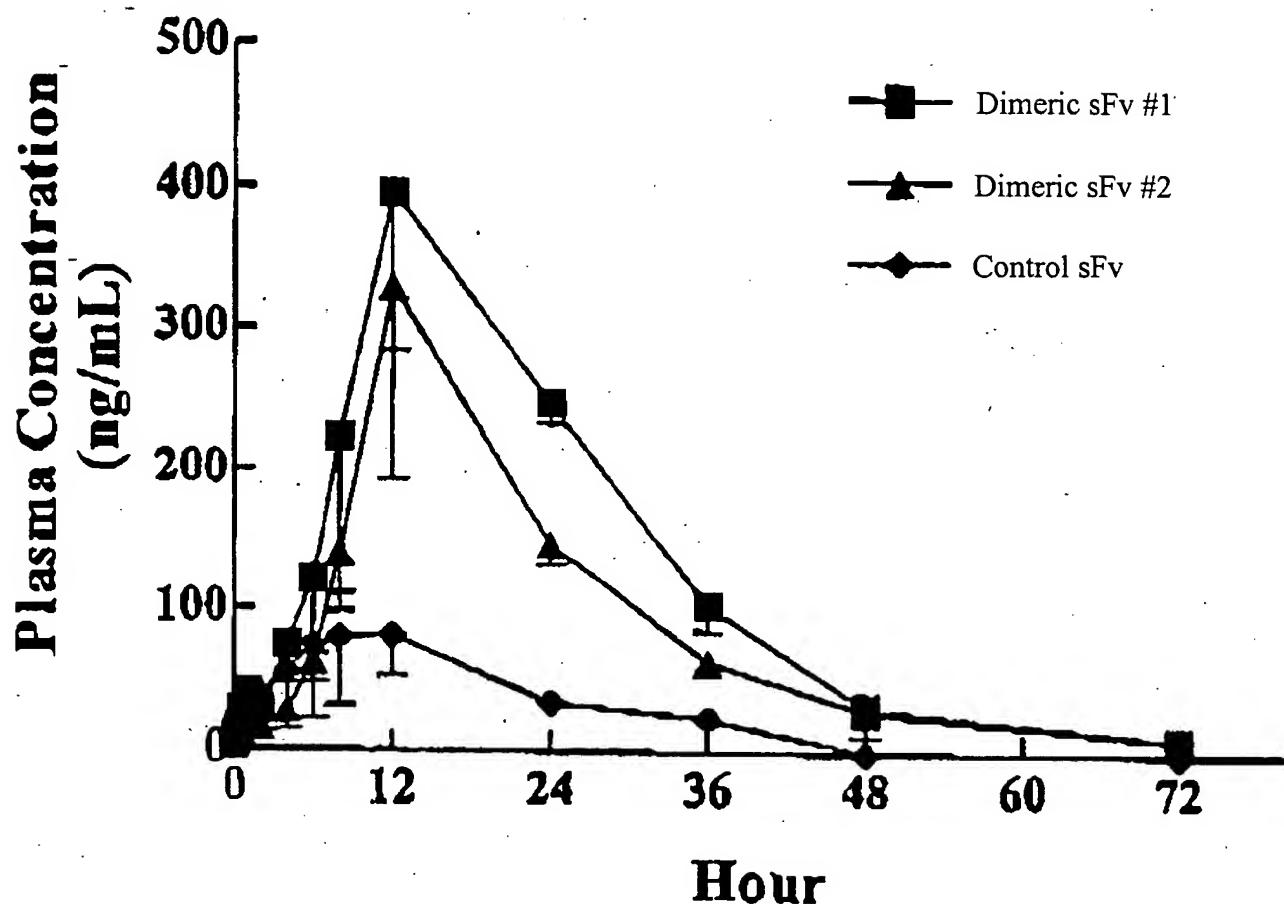


Fig. 2

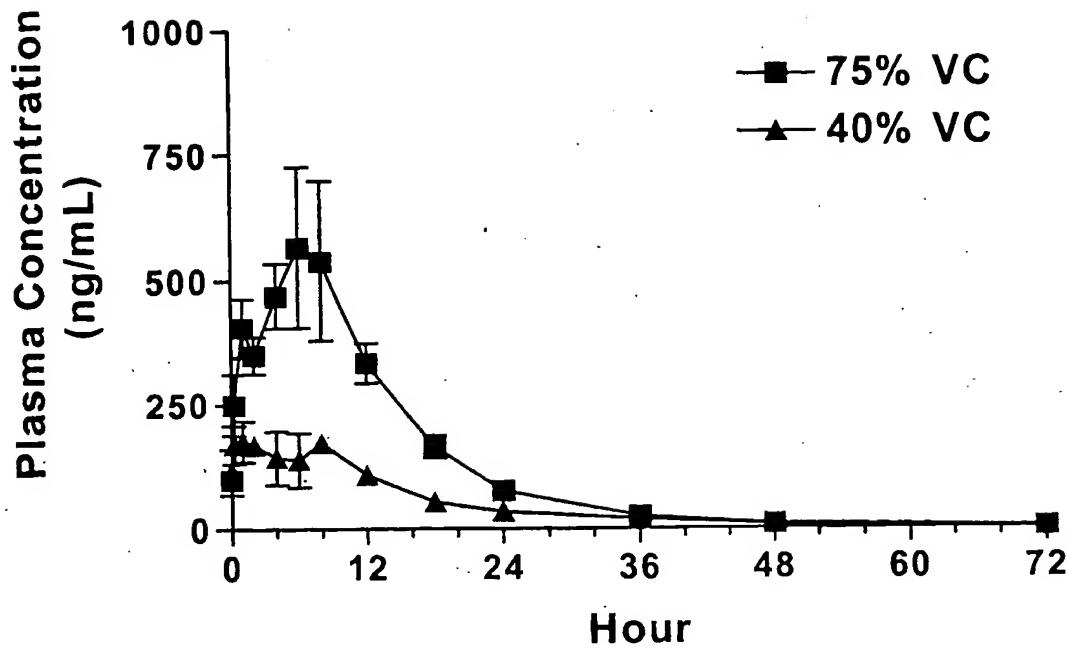


Fig. 3

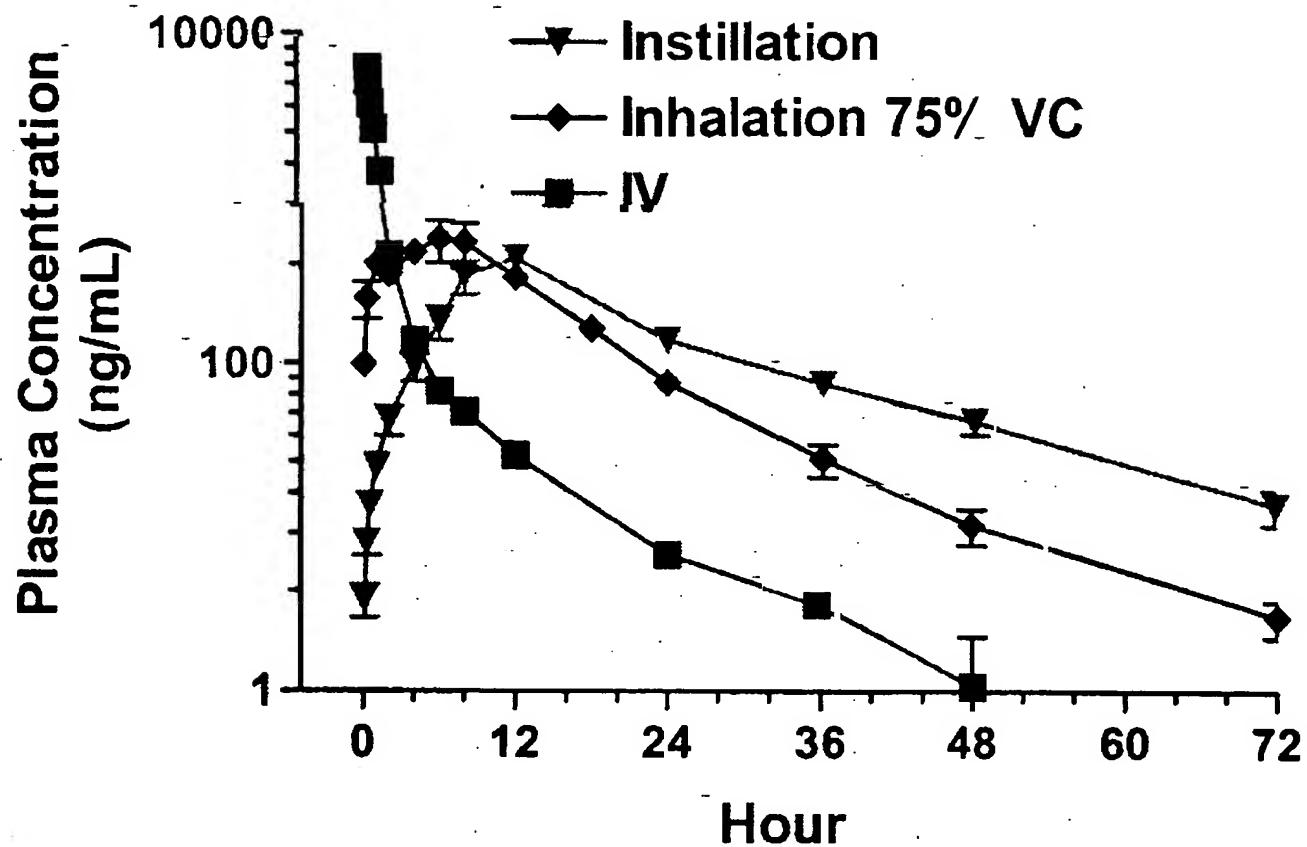


Fig. 4

pelB Leader	pelB Leader	5A Heavy Chain	5A Heavy Chain
ATGA AATACCTATT GCCTACGGCA GCCGCTGGAT TACT TTATGGATAA CGGATGCCGT CGGCGACCTA	SfiI	NcoI	PstI
141 TGTTATTACT CGCGGCCAG CGGCCATGG CCCAGGTACA GCTGCAGCAA TCAGGGGAG GCGTGGTCCA ACAAATAATGA GGGCGGGTC GGCGGTACCG GGGTCCATGT CGACGTCGGTT AGTCCCCCTC CGCACCCAGGT	SfiI	NcoI	PstI
5A Heavy Chain	5A Heavy Chain	5A Heavy Chain	5A Heavy Chain
GCCTGGAGG TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTACCTTCA GTAGCTATGC TATGCACTGG CGGACCCCTCC AGGGACTCTG AGAGGACACG TCGGAGACCT AAGTGGAACT CATGGATACG ATACGTGAC	BsaI	BsaI	BsaI
281 GTCCGCCAGG CTCCAGGGAA GGGGCTGGAG TGGGTCTAG CTATTAGTGG TAGTGGTGGT AGCACATACT CAGGGGGTCC GAGGTCCCTT CCCCGACCTC ACCCGAGTC GATAATCACC ATCACCACCA TCGTGTATGA	5A Heavy Chain	5A Heavy Chain	5A Heavy Chain
351 ACGCAGACTC CGTGAAGGGC CGGTTCACCA TCTCCAGAGA CAACGCCAAG AACTCACTGT ATCTGCAAAT TGGGTCTGAG GCACTTCCCG GCCAAGTGGT AGAGGTCTCT GTGGGGTTC TTGAGTGACA TAGACGTTA			

Fig. 5A

5A Heavy Chain

421 GAACAGGCCTG AGAGCCGAGG ACACGGCTGT GTATTACTGT GCGAGAGATA CCCGAGGGTA CTTCGATCTC
CTTGTGGAC TCTCGGCTCC TGTGCCGACA CATAATGACA CGCTCTCAT GGGCTCCAT GAAGCTAGAG

5A Heavy Chain Linker 5A Light Chain

491 TGGGGCCGTG GCACCCCTGGT CACCGTCTCC TAGGTTGGCG GAGGGTCATC TGAGTGTGACT CAGGACCCCTG
ACCCCGGCAC CGTGGGACCA GTGGCAGAGG AGTCCACCGC CTCCCCAGTAG ACTCGACTGA GTCCCTGGGAC

5A Light Chain

561 CTATGTTCTGT GGCCCTGGGA CAGACAGTCA GAATCACATG TCAAGGGGAC AGTCTCAGAA AGTATCATGC
GATACAGACA CGGGAAACCCCT GTCTGTCACT CTTAGTGTAC AGTTCCCCCTG TCAGAGTCTT TCATAGTACG

5A Light Chain

631 AAGCTGGTAT CAGGCAGAAC CAGGGCAGGG CCCTGTTCTT GTCATCTAT GTAAAGAATGA ACGTCCCTCA
TTCGACCAT A GTCGTCCTCG GTCGGTCCG GGGACAAGAA CAGTAGATAC CATCTTACT TGCAAGGGAGT

5A Light Chain

BamHI

701 ~~~~~ GGGATCCAG AGCGATTCCTC TGGGTCCACC TCAGGAGACA CAGCTTCCCTT GACCATCAGT GGGCTCCAGG
CCCTAGGGTC TCGCTAAGAG ACCCAGGGGG AGTCCTCTGT GTCGAAAGAA CTGGTAGTCA CCCGAGGTCC

5A Light Chain

771 CGGAAGATGA GGCTGACTAT TACTGTCACT CCCGAGACTC TAATGCTGAT CTTGTGGTGT TCGGGGAGG
GCCTTCTACT CCGACTGATA ATGACAGTGA GGGCTCTGAG ATTACGACTA GAACACCACA AGCCGCCCTCC

Fig. 5B

5A Light Chain

	BlnI	HindII	
	~~~~~	~~~~~	
			SalI
			~~~~~
			HincII
			~~~~~
	AvrII		
	~~~~~	~~~~~	
841	GACCAAGGTC ACCGTCCTAG GTTAATAAGT CGACCTCGAC		
	CTGGTCCAG TGGCAGGATC CAATTATTCA GCTGGAGCTG		

Fig. 5C

pelB Leader

ATGAA ATACCTATG CCTACGGCAG CCGCTGGATT
TACTT TATGGATAAC GGATGCCGTC GGCACCTAA

pelB Leader

5A Heavy Chain

SfiI

NcoI

PstI

71 GTTATTACTC GCGGCCAGC CGGCCATGGC CCAGGTACAG CTGCAGCAAT CAGGGGAGG CGTGGTCCAG
CAATAATGAG CGCCGGGTTCG GCGGTACCG GGTCCATGTC GACGTCGGTAA GTCCCCCTCC GCACCAAGGTTC

5A Heavy Chain

BsgI

141 CCTGGGAGGT CCCCTGAGACT CTCCTGTGCA GCCTCTGGAT TCACCTTCAG TAGCTATGCT ATGCACTGGG
GGACCCCTCCA GGGACTCTGA GAGGACACGT CGGAGACACTA AGTGAAGTC ATCGATACGA TACGTGACCC

5A Heavy Chain

211 TCCGCAGGC TCCAGGGAAG GGGCTGGAGT GGGCTCTCAGC TATTAGTGGT AGTGGTGGTA GCACATACTA
AGGCGGTCCG AGGTCCCTTC CCCGACCTCA CCCAGAGTCG ATAAATCACCA TCACCCACAT CGTGTATGAT

5A Heavy Chain

281 CGCAGACTCC GTGAAGGGCC GGTCACCCAT CTCCAGAGAC AACGCCAAGA ACTCACTGTA TCTGCAAAATG
GGGTCTGAGG CACTTCCGG CCAAGTGGTA GAGGTCTCTG TTGGGTTCT TGAGTGACAT AGACGTTTAC

Fig. 6A

5A Heavy Chain

351 AACAGGCCTGA GAGCCCAGGA CACGGCTGTG TATTACTGTG CGAGAGATAC CGGAGGTAC CCCAGGGTAC TTGGATCTCT
TTGTCTGGACT CTCGGCTCCT GTGCCGACAC ATAATGACAC GCTCTCTATG GGCTCCATG AAGCTAGAGA

5A Heavy Chain Linker 5A Light Chain

421 GGGGCCGTGG CACCCCTGGTC ACCGTTCTCCT CAGGTGGGG AGGGTCATCT GAGCTGACTC AGGACCCCTGC
CCCCGGCACC GTGGGACCAAG TGGCAGAGGA GTCCACCGCC TCCCAAGTAGA CTCGACTGAG TCCTGGGACG

5A Light Chain

491 TATGTCTGTG GCCTTGGGAC AGACAGTCAG AATCACATGT CAAGGGGACA GTCTCAGAAA GTATCATGCA
ATACAGACAC CGGAACCCCTG TCTGTCAGTC TTAGTGTACA GTTCCCCCTGT CAGAGTCTT CATAGTACGT

5A Light Chain

561 AGCTGGTATC AGCAGAAAGCC AGGGCAGGCC CCTGTTCTTG TCATCTATGG TAAGAATGAA CGTCCCTCAG
TCGACCATAG TCGTCTCGG TCCCGTCCGG GACAAGAAC AGTAGATAAC ATTCTTACTT GCAGGGAGTC

5A Light Chain

BamHI

631 GGATCCCAGA GCGATTCTCT GGGTCCACCT CAGGAGACAC AGCTTCCTTG ACCATCAGTG GGCTCCAGGC
CCTAGGGTCT CGCTAAAGAGA CCCAGGTGGA GTCCTCTGTG TCGAAGGAAC TGGTAGTCAC CCGAGGTCCG

Fig. 6B

5A Light Chain

701 GGAAGATGAG GCTGACTATT ACTGTCACTC CCGAGACTCT AATGCTGATC TTGTGGTGT CGGCGGAGGG
CCTTCTACTC CGACTGATAA TGACAGTGTAG GGCTCTGAG TTACGACTAG AACACCACAA GCCGCCTCCC

5A Light Chain (G3S) 2 Linker IL2 Coding Region

771 ACCAAGGTCA CCGTCCCTAGG TGGGGGGGA AGCGGGGGAG GCTCCGCACC TACTCAAGT TCTACAAAGA
TGGTTCCAGT GGCAAGGATCC ACCGGCCGCCT TCGGGGCCTC CGAGGGCTTC ATGAAGTTCA AGATGTTCT

IL2 Coding Region

841 AAACACAGCT ACAACTGGAG CATTACTTC TGGATTACA GATGATTG AATGGAATT ATAATTACAA
TTTGTGTGCA TGGTGAACCTC GTAAATGAAAG ACCTAAATGT CTACTAAAC TTACCTTAAT TATTAATGTT

IL2 Coding Region

911 GAATCCCCAA CTCACCAAGGA TGCTCACATT TAAGTTTAC ATGCCCAAGA AGGCCACAGA ACTGAAACAT
CTTAGGGTTT GAGTGGTCTT ACGAGTGTAA ATTCAAAATG TACGGTTCT TCCGGTTCT TGACTTTGTA

IL2 Coding Region

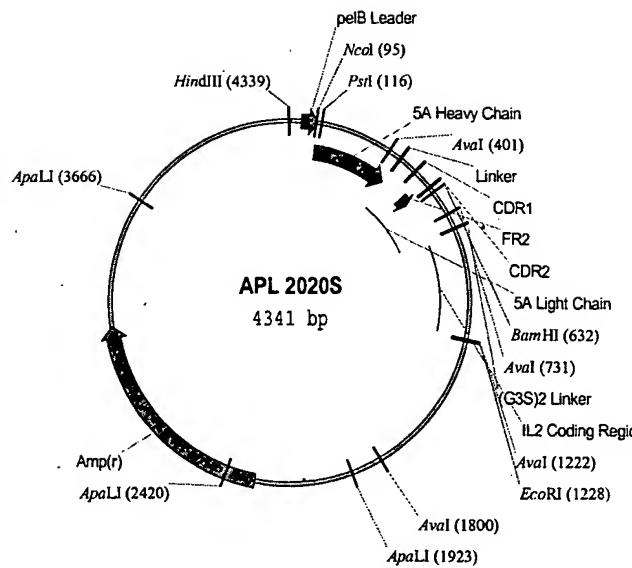
981 CTTCAGTGTC TAGAAGGAAGA ACTCAAACCT CTGGAGGAAG TGCTAAATT AGCTCAAAGC AAAAACCTTC
GAAGTCACAG ATCTTCTTCT TGAGTTGGA GACCTCCCTC ACGATTAAAC TCGAGTTTCG TTTTGAAAG

XbaI

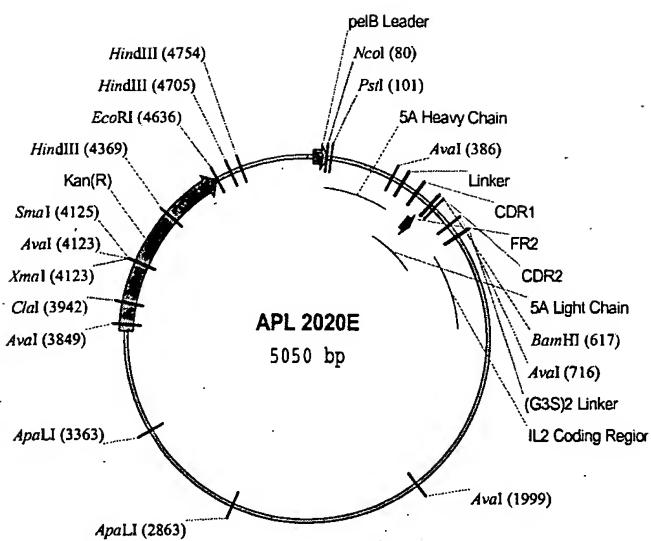
Fig. 6C

	IL2 Coding Region	
		BfRI
		~~~~~
		AflII
		~~~~~
1051	ACTTAAGACC CAGGGACTTA ATCAGCAATA TCAACGTAAT AGTTCTGGAA CTAAGGGAT CTGAAACAAAC TGAATTCTGG GTCCCTGAAAT TAGTCGTTAT AGTTGCATTA TCAAGACCTT GATTCCCTA GACTTGTG	
	IL2 Coding Region	
		ECORI
		~~~~~
		XbaI
		~~~~~
		PaeR7I
	IL2 Coding Region	
1121	ATTCATGTGT GAATATGCTG ATGAGACAGC ACCATTGTA GAATTCTGA ACAGATGGAT TACCTTTGT TAAGTACACA CTTATACGAC TACTCTGTCG TGTTAACAT CTTAAAGACT TGTCTACCTA ATGGAAAACA	
	IL2 Coding Region	
		ECORI
		~~~~~
		XbaI
		~~~~~
		PaeR7I
1191	CAAAGCATCA TCTCAACACT AACTTAATAA CTCGAGGAAT TC GTTTCGTAGT AGAGTTGTGA TTTGAATTATT GAGCTCCCTA AG	

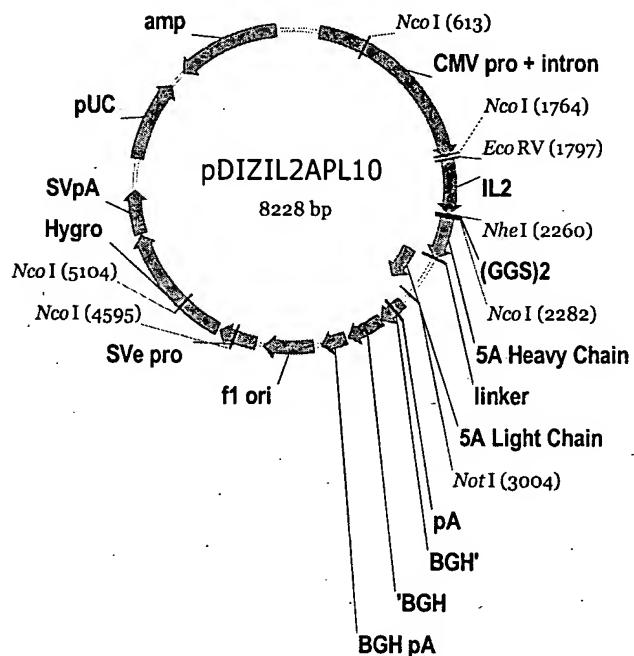
Fig. 6D



pSyn sFv-IL-2 Fusion Construct

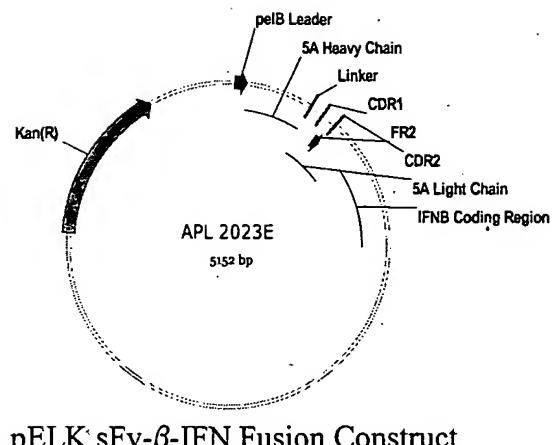


pELK sFv-IL-2 Fusion Construct

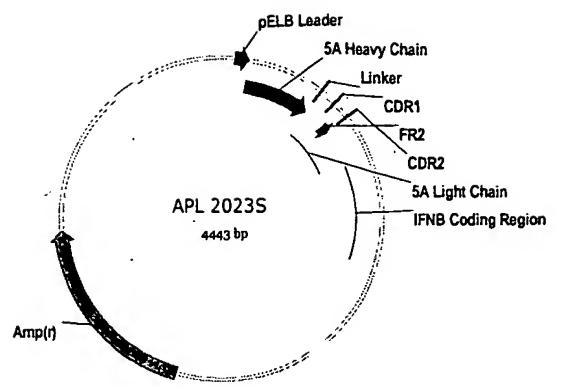


pDIZ sFv-IL-2 Fusion Construct

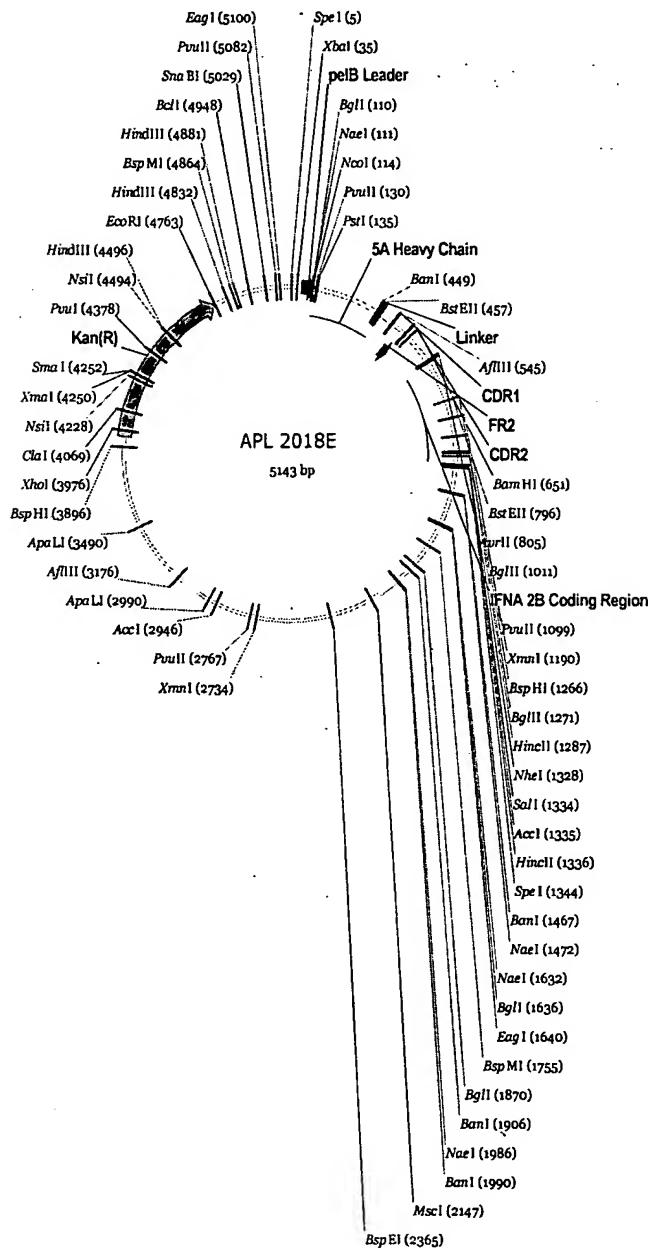
Fig. 7



pELK sFv-β-IFN Fusion Construct



pSyn sFv-β-IFN Fusion Construct



pELK sFv-α-IFN Fusion Construct

Fig. 8